OSV *Bold* Surveys

Prepared: September 13, 2007

In Brief:

- EPA Region 1, EPA Office of Research and Development Atlantic Ecology Division, Coastal America, and the Narragansett National Estuary Program, hosted a successful open ship event in Newport, Rhode Island on July 5.
- A popular part of the event (especially with kids!) was a station where guests could pick up and examine sea life that had been collected from Narragansett Bay earlier in the day.

This summer, scientists on the *Bold* completed five scientific surveys and hosted an open ship event.

Survey 1: New England Winter flounder survey
The purpose of this survey was to assess impacts of coastal development on fisheries through determining the relative contribution and importance of near-shore habitats to the adult Winter flounder population. Winter flounder is a commercially and recreationally important fish species. Near-shore estuaries provide critical nursery habitat for juveniles that recruit to the offshore adult flounder population. Previous studies identified chemical fingerprints for each unique near-shore nursery habitat through analyzing isotopes in juvenile fish. After using the *Bold* to collect adult Winter flounder, scientists then analyzed isotopes in the adults. Scientists will be able to determine which nurseries are contributing to the adult flounder population after comparing juvenile and adult chemical fingerprints.
Survey duration: July 6-11, 2007
Chief Scientist: William Muir (EPA Region 3)

Survey 2: Eastern Long Island Sound dredged material disposal site survey
The survey team examined active and historic dredged material disposal sites to determine the impact of past and current disposal activities. Alternative dredged material disposal sites were also surveyed as required by a settlement between New York and Connecticut. Survey results will be used by EPA and the US Army Corps of Engineers to develop a Dredged Material Management Plan for the Long Island Sound region.
Survey duration: July 14-27, 2007
Chief Scientist: Jean Brochi (EPA Region 1)
Survey partners: US Army Corps of Engineers

Survey 3: Coastal eutrophication and ocean outfall survey
Coastal eutrophication data was collected from the mouth of New York Harbor to North Carolina, and will be added to the decades long trend monitoring database on nutrient enhancement in these areas. In addition, ocean waters in Delaware, Maryland, and Virginia were surveyed for impacts of ocean outfall discharges on bacterial contamination to determine if water quality standards are being met.
Survey duration: July 28- August 1, 2007
Chief Scientist: William Muir (EPA Region 3)

Survey 4: Ocean outfall, dredged material disposal site, fish waste disposal, and fish tissue assessments
A variety of surveys were completed during this five day period in the mid-Atlantic. These included an Assessment of water and sediment quality at a fish waste disposal site, sampling Summer flounder near the mouth of the Chesapeake Bay to analyze PCB (polychlorinated biphenyl) concentrations, an assessment of bacterial contamination near ocean outfalls, and an assessment of a dredged material disposal site.
Survey duration: August 2-7, 2007
Chief Scientist: William Muir (EPA Region 3)

Survey 5: Gulf of Mexico hypoxia study (second of three planned in 2007)
The purpose of the survey was to characterize the magnitude and variability of physical, chemical, and biological processes in the water column and sediments along coastal Louisiana in the summer. Data from this and other seasonal surveys provide new insight into oceanographic conditions during times typically preceding peak river discharges when hypoxic conditions in bottom waters are either not present or just beginning to develop. The data will also aid in the development of a high resolution 3-D model of the hypoxic zone. This model should help to determine a loading threshold using Total Maximum Daily Loads.
Survey duration: August 18- September 1, 2007
Chief Scientist: George Craven (EPA ORD Gulf Ecology Division)